



Naval Surface Warfare Center, Dahlgren Division

CAPT Michael H. Smith

Commander

Dennis M. McLaughlin

Technical Director

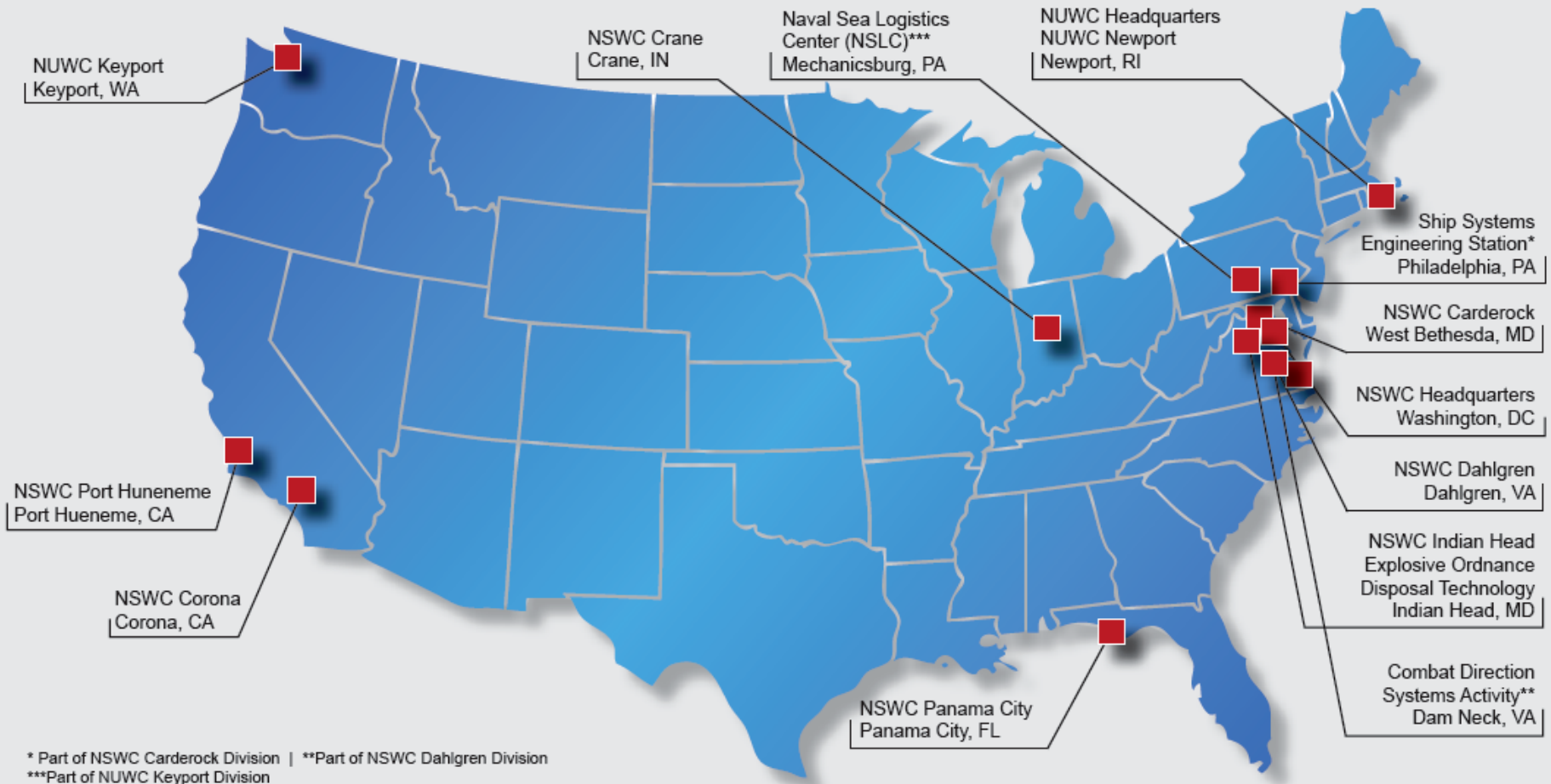


Professional Staffers Senate Appropriations Committee (Defense)



30 October 2013

Warfare Center Enterprise



■ Provide research and development (R&D), test and evaluation (T&E) for the future Navy and in-service engineering and logistics support to the current Navy

■ Business-based enterprise operating under the Navy Working Capital Fund (NWCf)
■ Aligned under 133 Technical Capabilities across 9 Divisions

■ Diverse and highly educated workforce focused on innovation (~14,700 scientists, engineers, and technicians with over 600 Ph.D.s)

■ Maintain and operate unique research, development, test and evaluation facilities

Naval Surface Warfare Center Dahlgren Division



- ❖ NSWC Dahlgren Division (NSWCDD) is a naval Research, Development, Test and Evaluation (RDT&E) institution founded in Naval Warfare, providing science, technology, engineering leadership and innovation that our nation's naval and joint forces rely upon for superior warfighting capability.
- ❖ NSWCDD serves as the surface Navy's center of excellence for combat and warfare system integration and certification.

NSWC Dahlgren Division



Updated 2/12

How We Got Here

NSWC Dahlgren: A Legacy of Evolution & Revolution

1918

1940

1950

1960

1970

1980

1990

2000+

TODAY and the Future

Systems Engineering

- Combat Systems
- New Warfare Concepts
- Ballistic Missile Defense
- Integrated Warfare Systems

- Electric Weapons
 - Multi-use (Sense, ID, Engage)
 - Scalable effects
 - Lower cost

Computational Sciences

- Targeting
- Strategic Fire Control Computation
- Digital Fire Control

- Advanced materials
 - Topside Design
 - Control of RF environment

Research & Development

- Math, Physics, Chemistry, Engineering

- Distributed Networked Systems

Test & Evaluation

- Integration of Unmanned and Autonomous Systems

- Advanced Sensors

NSWCDD, Dahlgren, Virginia

Integrated Capabilities



E3 Testing



Chem-Bio Defense



Railgun



Naval Directed Energy Center



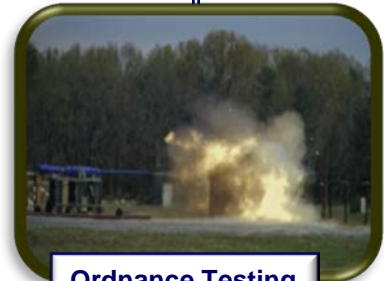
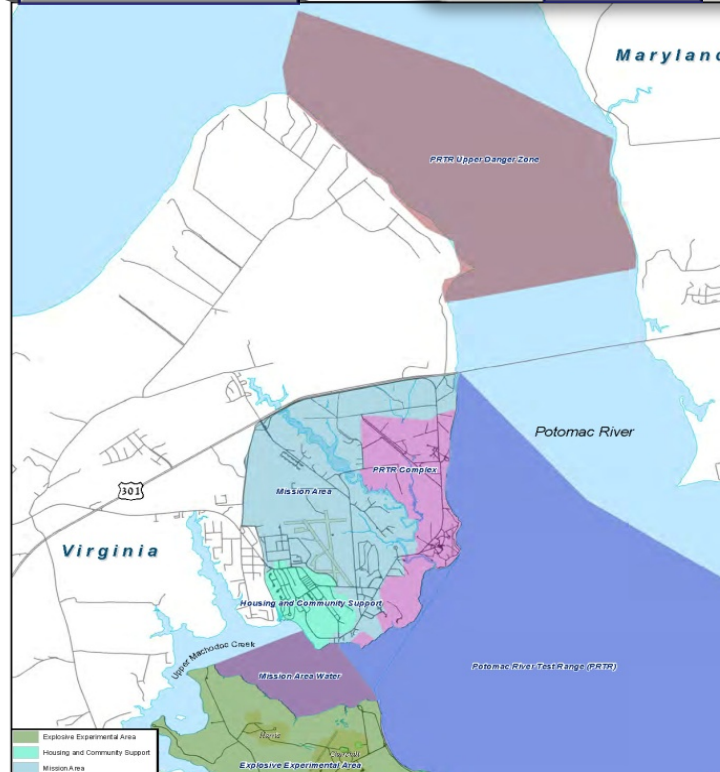
Sensors and Surface Combat Systems



SLBM Fire Control Systems



Tomahawk



Ordnance Testing



Integrated Warfare Systems Laboratory

Providing capabilities and innovative solutions in the areas of weapons and sensor systems, and combat systems for 95 years.

NAVSEA's Hampton Roads Warfare Center



Direct Coordination with Training Commands



**NSWC
Dahlgren
Division**

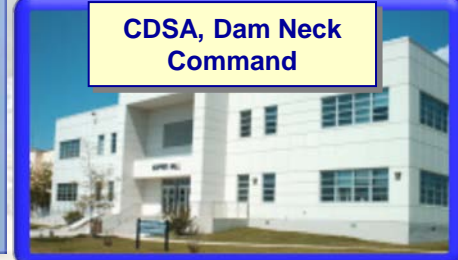


**Joint and Coalition
Warfighting**

"VACAPES OPERATING AREA"
The Only Test and Training space in the world covered by land-based SPS-48 SPS-49 and SPY 1 Radars.



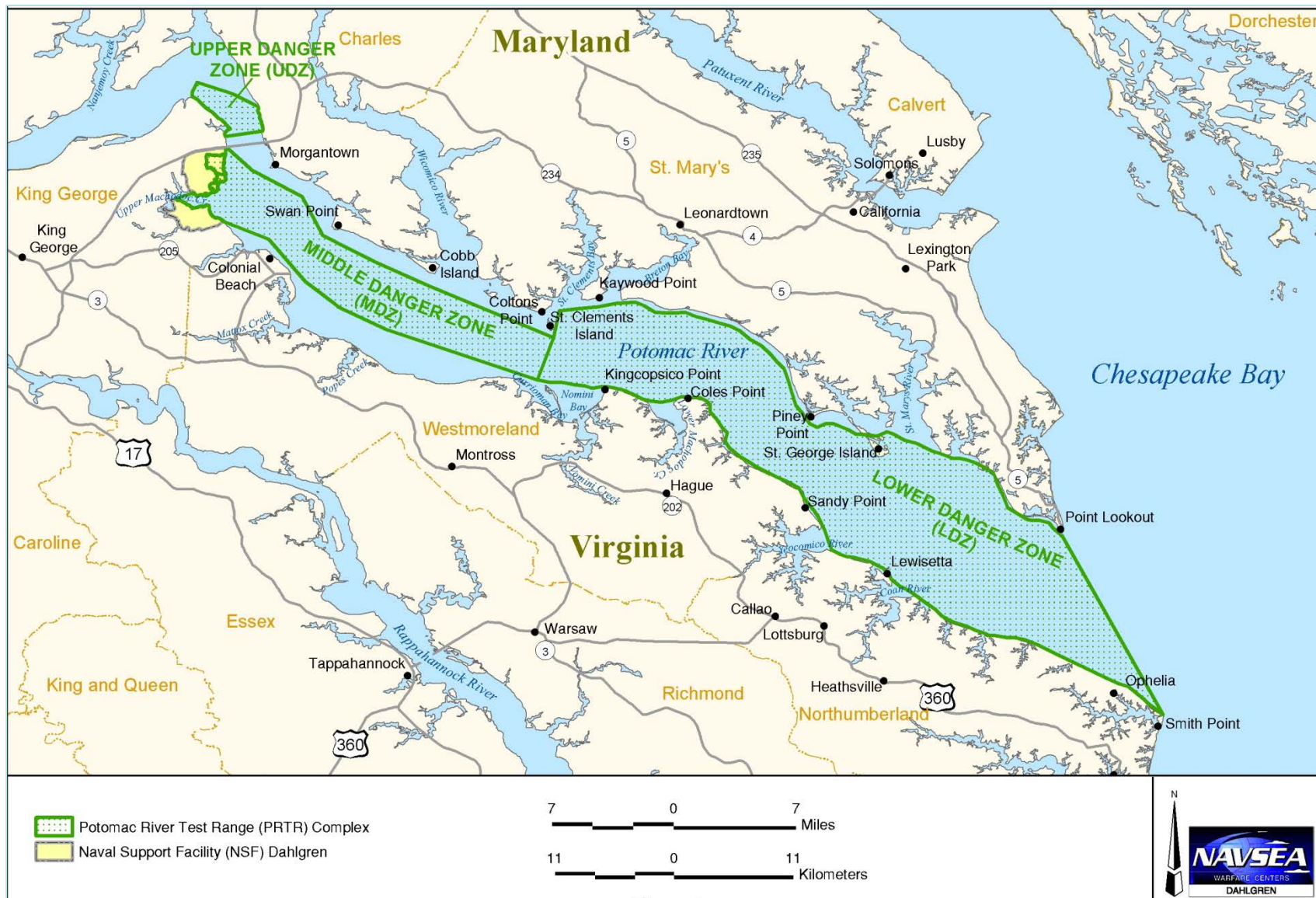
**Emergency Homeland
Defense Capability**



**CDSA, Dam Neck
Command**

Celebrating our 50-year heritage of complex mission critical systems, software and hardware engineering, development & life cycle services for real-time tactical systems co-located with Hampton Roads Warfighter and Training Commands and the US Atlantic Fleet

Potomac River Test Range Complex



NSWC Dahlgren Division Program Areas

G Engagement Systems

- Advanced Weaponry
- Expeditionary Weapon Sys.
- Guns and Munitions
- Launcher Systems and Integration
- Lethality, Vulnerability, and Systems Effectiveness
- Small Boat & Land Vehicle Systems Integration
- Systems Safety Eng
- Test and Evaluation
- Unmanned Systems Integration

K Strategic & Weapon Control Systems

- Strategic Systems Programs
- Surface and Under Sea Warfare
- Tomahawk
- Aegis Weapons Control Systems
- Littoral Combat Ship Surface Warfare
- Vertical Launch System

Q Electromagnetic & Sensor Systems

- Surface Ship Radars
- Directed Energy/CIED
- E3 Programs: Systems Engineering, Radiation Hazards Program, HERO, SEMCIP/EM, Electro-optic/Infrared (EO/IR) Systems
- Spectrum Engineering Management
- Topside Design
- Advanced Computational Technologies
- Electronic Warfare (EW) Systems Integration

W Warfare Systems

- Combat Control & Integration
- Future Warfare Systems Engineering
- Warfare Analysis
- Warfare Systems Tech & Concept Exploration
- Open Architecture (OA)
- BMD Systems Engineering
- Human Systems Integration
- Joint Track Management
- Naval Integrated Fire Control

Z Asymmetric Systems

- Chemical-Biological & Radiological Defense (CBRD)
- Identity Management, Biometrics, & Forensics
- Mission Assurance
- Tagging, Tracking, & Locating (TTL)
- Anti-Terrorism and Force Protection (AT/FP)

F Maritime and Joint Systems

- Integrated Training Capabilities
- Force Integration & Inter-operability
- Integrated Combat Control Systems
- Global Maritime Security

NSWCDD Technical Capabilities

- ❖ *Force & Surface Platform Level Warfare Systems Analysis and Modeling*
- ❖ *Weapon Systems Analysis, Effects, and Effectiveness*
- ❖ *Radar and Electro-Optic Systems RDT&E*
- ❖ *Surface Warfare Systems Engineering & Integration RDT&E*
- ❖ *Surface Combat Systems Engineering & Integration RDT&E*
- ❖ *Surface Combat Control Systems S&T, RDT&E*
- ❖ *Surface Conventional Weapon Control Systems RDT&E*
- ❖ *Surface Warfare System and Force Level Certification/IV&V*
- ❖ *Human Systems Integration Science and Engineering*
- ❖ *Missile Systems Integration*
- ❖ *Surface Conventional and Electromagnetic Gun Systems RDT&E*
- ❖ *Directed Energy Systems RDT&E*
- ❖ *Weaponization of Surface & Air Unmanned Systems*
- ❖ *Marine Corps and Other Weaponry Systems RDT&E*
- ❖ *Re-Entry Systems*
- ❖ *Strategic Mission Planning, Targeting, and Fire Control Systems*
- ❖ *Surface Electronic Warfare Systems Architecture & Combat System Integration RDT&E*
- ❖ *Surface Warfare Systems Safety*
- ❖ *Surface Warfare Electromagnetic Environmental Effects*
- ❖ *Chemical, Biological and Radiological Warfare Defense Systems*
- ❖ *National Response Missions, Including Homeland Security and Defense*
- ❖ *Physical & Non-Physical Vulnerability Analysis*
- ❖ *Force Level Warfare Systems Engineering and Integration*
- ❖ *Force Level Warfare Systems Interoperability Engineering*
- ❖ *Tactical Common Data Communications Systems Integration and Interoperability*
- ❖ *Integrated Surface Combat Control Systems Support*
- ❖ *Integrated Training Systems*
- ❖ *Radar Distribution Systems*
- ❖ *Joint Command and Control Systems Integration and Architecture Development*

•Indicates work performed at
CDSA, Dam Neck

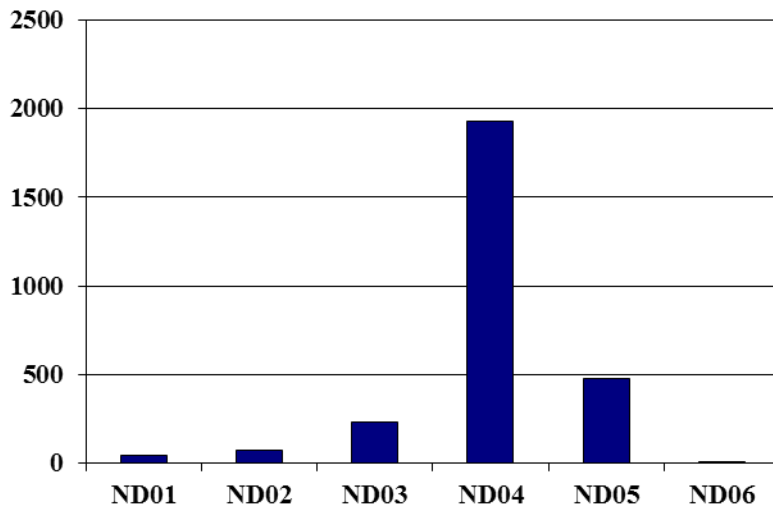
Questions



Dahlgren Division Workforce Skill Set

TOTAL CIVILIAN ON BOARD 3785	TOTAL MILITARY 50	TOTAL ON BOARD 3835	CIVILIAN PERMANENT ON BOARD 3758	STUDENT TRAINEES COOP - ON BOARD 61
---	----------------------------------	------------------------------------	---	--

Scientists & Engineers (by grade)



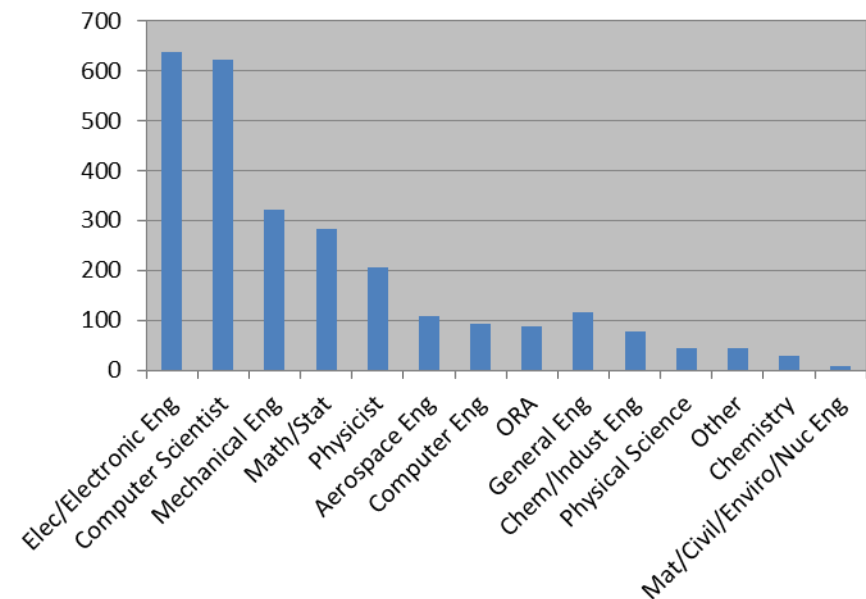
CIVILIAN STAFFING

SCIENTISTS AND ENGINEERS	2,672
S&E TECHNICIANS	276
ADMINISTRATIVE SPCL/SUPP	487
OTHER TECHNICIANS SPCL/SUPP	229
CLERICAL	53
STUDENT TRAINEES	65

DEGREES - ALL ON BOARD PERSONNEL

	PhD	MS/MA	BS/BA
SCIENTISTS AND ENGINEERS	132	843	1697
NON-S&Es	7	106	283
TOTAL	139	949	1980

S&E Disciplines



Gross Pay

Surrounding Counties

Virginia:

Caroline	8.7 M
Fredericksburg	22.4 M
King George	117.4 M
Spotsylvania	70.0 M
Stafford	41.7 M
Westmoreland	17.2 M

Maryland:

Anne Arundel	1 M
Calvert	.6 M
Charles	16.7 M
Prince Georges	2.7 M
St. Mary's	2.7 M



Contracting Efforts

Total Contracting Effort
\$ 668M*

VA Contractors: \$ 348M

MD Contractors: \$ 167M

Total Number of
Badged Contractors:
2050

Employees

Civilian Total

3415

(MD, VA and all other states)

Surrounding Virginia Co/Cities:

Caroline	95
Fredericksburg	241
King George	1153
Spotsylvania	685
Stafford	393
Westmoreland	191

Surrounding Maryland Counties:

Anne Arundel	11
Calvert	6
Charles	162
Prince Georges	27
St. Mary's	27

*FY12 contracting effort totals